# Substances - Water-Reactive (Emitting Flammable And Toxic Gases)

# **POTENTIAL HAZARDS**

## FIRE OR EXPLOSION

- Produce flammable and toxic gases on contact with water.
- · May ignite on contact with water or moist air.
- Some react vigorously or explosively on contact with water.
- · May be ignited by heat, sparks or flames.
- · May re-ignite after fire is extinguished.
- · Some are transported in highly flammable liquids.
- · Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- Highly toxic: contact with water produces toxic gas, may be fatal if inhaled.
- Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death.
- May produce corrosive solutions on contact with water.
- · Fire will produce irritating, corrosive and/or toxic gases.
- · Runoff from fire control may cause pollution.

## **PUBLIC SAFETY**

- CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- · Keep unauthorized personnel away.
- · Stay upwind.
- · Keep out of low areas.
- · Ventilate the area before entry.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not
  effective in spill situations where direct contact with the substance is possible.

## EVACUATION

## Spill

See Table 1 - Initial Isolation and Protective Action Distances for highlighted materials. For non-highlighted materials, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

#### Fire

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

# **EMERGENCY RESPONSE**

## FIRE

- DO NOT USE WATER OR FOAM. (FOAM MAY BE USED FOR CHLOROSILANES, SEE BELOW)
  Small Fire
- Dry chemical, soda ash, lime or sand.

## Large Fire

- DRY sand, dry chemical, soda ash or lime or withdraw from area and let fire burn.
- FOR CHLOROSILANES, DO NOT USE WATER; use AFFF alcohol-resistant medium expansion foam; DO NOT USE dry chemicals, soda ash or lime on chlorosilane fires (large or small) as they may release large quantities of hydrogen gas that may explode.
- · Move containers from fire area if you can do it without risk.

## Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- · Cool containers with flooding quantities of water until well after fire is out.
- · Do not get water inside containers.
- · Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- · ALWAYS stay away from tanks engulfed in fire.

## SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- · Do not touch or walk through spilled material.
- · Stop leak if you can do it without risk.

## DO NOT GET WATER on spilled substance or inside containers.

- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- FOR CHLOROSILANES, use AFFF alcohol-resistant medium expansion foam to reduce vapors.

## Small Spill

- Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
- · Dike for later disposal; do not apply water unless directed to do so.

## Powder Spill

- Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
- DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

## FIRST AID

- · Move victim to fresh air.
- Call 911 or emergency medical service.
- · Give artificial respiration if victim is not breathing.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- · Administer oxygen if breathing is difficult.
- · Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, wipe from skin immediately; flush skin or eyes with running water for at least 20 minutes.
- · Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.